

The logo for Snowmass 2021, featuring the text "SnowMass2021" in a stylized, handwritten font. "Snow" is in light blue, "Mass" is in white, and "2021" is in white. The background is a dark grey rectangle.

*SnowMass2021*

# *A Primer*

from the Snowmass Topical Group on Neutrino Properties (NF05)

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# What is Snowmass?

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- ◆ The US particle-physics planning process has several phases:
  - ◆ Community planning (“**Snowmass**”): Massive year-long discussion culminating in a 1000+-physicist meeting in July 2021. Capture the questions, challenges and new ideas across the field – not only in the US but around the world.
  - ◆ Strategic advice (“**P5**”): Particle Physics Project Prioritization Panel shapes community input into strategic 10-year plans for differing US budget scenarios
  - ◆ US funding decisions (**DOE and NSF**): advised by High Energy Physics Advisory Panel (HEPAP) which commissions P5 report
- ◆ Last Snowmass process: 2013 (P5 report followed 2014)
  - ◆ Last-but-one was in 2001

# Too Long; Did Not Read

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- ◆ Through Snowmass, the nuclear/particle physics community makes the case for **the most important science** to do
- ◆ Eventually this input **guides US funding agencies** for the next ~5-20 years
- ◆ Input from scientists outside the US is critically important: our physics is **worldwide!**
- ◆ For the first time, we have a Neutrino Frontier and a working group on Neutrino Properties. Let's make the case for this great work!
- ◆ Contributed papers are publicly available

# Summer Mini-Workshop Series

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◆ <https://indico.fnal.gov/category/1172/>

Date	Subject
8 July	Direct neutrino mass measurements
15 July	Particle theory of neutrinoless double-beta decay
22 July	Nuclear theory of neutrinoless double-beta decay
5 August	Neutrinoless double-beta decay experiment I
12 August	Neutrino electromagnetic properties
19 August	Neutrinoless double-beta decay experiment II

# Upcoming Activities II

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- ◆ July 17: online Neutrino Town Hall
  - ◆ <https://indico.fnal.gov/event/43581/>
- ◆ **August 31: Letters of Interest** ( $\leq 2$  pages, not counting references)
  - ◆ Precursors to longer proposals or white papers
  - ◆ Used to help probe community interest and plan Snowmass
  - ◆ Please list a corresponding author (just in case)
- ◆ **July 31, 2021: Contributed papers**
  - ◆ Part of Snowmass proceedings – input to strategy
  - ◆ White papers, proposals, new results, arguments for prioritization
- ◆ **November 4 – 6: Snowmass Planning Meeting** (Fermilab or remote)
- ◆ Spring 2021: Neutrino Planning Meeting
- ◆ **July 11 – 20, 2021: Snowmass main meeting** (UW, Seattle)

# Join the Discussion

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- ◆ **Mailing list:**

- ◆ Send an email to `listserv@listserv.fnal.gov` with empty subject line, and body text:
- ◆ *subscribe SNOWMASS-NF05-PROPERTIES Your Name*

- ◆ **#neutrino\_properties** and **#neutrino** channels on Snowmass slack

- ◆ Many other interesting channels too – theory, instrumentation, community engagement, and more
- ◆ We'll add you to Slack if you join our mailing list, or email one of us to be added

# Useful links

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- ◆ Main Snowmass site:
  - ◆ <https://snowmass21.org/>
  - ◆ Neutrino Properties: <https://snowmass21.org/neutrino/properties/start>
  - ◆ Letters of Intent: <https://snowmass21.org/loi>
  - ◆ Contributed Papers: <https://snowmass21.org/submissions/start>
- ◆ Documents from Snowmass 2013 (neutrinos in Intensity Frontier)
  - ◆ <https://www.slac.stanford.edu/econf/C1307292/docs/IntensityFrontier.html>